October 20, 2020 Reference No. 11215702

Mr. Gary Baumgarten, EPA Project Coordinator
United States Environmental Protection Agency, Superfund Division (6SF-RA)
1201 Elm Street, Suite 500
Dallas, Texas 75270

Dear Mr. Baumgarten:

Re: San Jacinto River Waste Pits Superfund Site - Northern Impoundment
Waste Characterization Evaluation;
EPA Region 6, CERCLA Docket No. 06-02-18 for Remedial Design

On behalf of International Paper Company (IPC) and McGinnes Industrial Maintenance Corporation (MIMC; collectively referred to as the Respondents), GHD Services Inc. (GHD) submits this letter to the United States Environmental Protection Agency (EPA) in connection with the remedial design (RD) for the Northern Impoundment of the San Jacinto River Waste Pits Site in Harris County, Texas (Site). Its purpose is to describe how pulp and paper mill waste (Waste), proposed to be excavated as part of the Northern Impoundment remedial action (RA), has been characterized and classified in accordance with the Resource Conservation and Recovery Act (RCRA) regulations. Based on the waste characterization process described below, the Waste is not a hazardous waste.

1. Site History

The Site is located in Harris County, Texas, east of the City of Houston, between two unincorporated areas known as Channelview and Highlands. The Northern Impoundment was operated as a monofill for the disposal of Waste for an approximate nine month period from September 1965 to May 1966. The Northern Impoundment is located immediately north of the Interstate Highway 10 (I-10) bridge over the San Jacinto River.

According to the Record of Decision (ROD), the RA for the Northern Impoundment will include, among other things, removal of approximately 162,000 cubic yards (cy) of Waste exceeding the EPA-selected cleanup level of 30 nanograms per kilogram (ng/kg) of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxicity equivalent (TEQ) located beneath an armored cap in the Northern Impoundment. The volume of Waste to be removed, as estimated for purposes of the Northern Impoundment 30% RD, is now understood to be approximately 212,000 cy.

A figure of the Northern Impoundment has been included as Figure 1.

2. Waste Characterization Evaluation

Material excavated for off-site disposal from a Superfund site is not, simply by virtue of the material containing hazardous substances, considered to be a hazardous waste as defined by RCRA. Rather, the

material must be characterized following the requirements in RCRA to determine whether it is a hazardous waste. In accordance with Title 40 of the Code of Federal Regulations (CFR) Part 261 - Identification and Listing of Hazardous Waste, the applicable requirements in the following subparts of Part 261 were evaluated:

Subpart A - Definition of Solid Waste, Hazardous Waste & Exclusions (§§ 261.1-.9)

Subpart B - Criteria for Identifying the Characteristics and Listing of Hazardous Wastes (§§ 261.10-.11)

Subpart C - Characteristics of Hazardous Waste (§§ 261.20-.24)

Subpart D - Lists of Hazardous Wastes (§§ 261.30-.33)

The Waste consists solely of wastewater treatment sludge generated at the Champion Pulp and Paper Mill in Pasadena, Texas in the mid-1960's. The wastewater from the pulp and paper manufacturing process was processed through primary settling basins for suspended solids removal. The slurried solids from the primary basins were pumped sequentially to two secondary basins for further dewatering and accumulation pending disposal. The accumulated solids in these secondary basins were removed and barged to the Northern Impoundment for disposal. The Waste, consisting primarily of cellulose wood pulp and clay binders, contains dioxins and furans which were formed as an unintentional by-product of the pulp bleaching process.

2.1 Is the Waste classified as a Solid Waste under RCRA?

The definition of "solid waste" is any discarded material that is not excluded under § 261.4 (a), by a variance under § 260.31, or by a non-waste determination under § 260.30 and § 260.34.

A "discarded material" is any material that is:

- Abandoned
- Recycled
- Considered inherently waste-like

The Waste meets the definition of a "solid waste" since it is a "discarded material." Further, none of the solid waste exclusions cited above apply to the Waste. Since the Waste is a "solid waste," the next step in the characterization process was to determine whether it is a "hazardous waste." A solid waste is characterized as a hazardous waste either because (1) it is listed on one of the four lists of hazardous wastes developed by EPA, or (2) it exhibits one of the four characteristics of a hazardous waste as defined in EPA's regulations.

2.2 Is the Waste a Listed Hazardous Waste under RCRA?

A solid waste is classified as a hazardous waste if it is on one of the four lists of hazardous wastes contained in 40 CFR §§ 261.31-261.33 and is not otherwise excluded from classification as a hazardous waste. Each list is referred to with reference to a "code" ("F", "K", "P", and "U"). As detailed below, the Waste is not on either the "F" list in 40 CFR § 261.31 or the "K" list in 40 CFR § 261.32. Furthermore, as a

manufacturing process waste, the Waste is not considered a discarded commercial chemical product subject to the listings in § 261.33 which contain the “P” and “U” lists. Thus, the Waste is not a listed hazardous waste.

2.2.1 Listed Hazardous Waste Codes from Non-Specific Sources (“F” Codes)

Under the RCRA program, there are a number of solid wastes that are classified as hazardous wastes because they fall within the listing descriptions in 40 CFR § 261.31 (Hazardous Wastes from Non-Specific Sources). Twenty-eight F-coded wastes are currently identified in § 261.31 by waste codes ranging from F001 through F039. A complete list of the § 261.31 waste code descriptions is provided in Attachment A.

The § 261.31 F-list of hazardous wastes identifies manufacturing process wastes produced by a wide variety of industrial operations. For this reason, these listed wastes are referred to as process wastes generated “from nonspecific sources.” Waste Codes F020 to F023 and F026 to F028 were included in the F-list, at least in part, due to the presence of dioxin or dioxin precursors in the wastes. These wastes are described as follows:

F020 *= Wastes from the production or manufacturing use of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives.*

F021 *= Wastes from the production or manufacturing use of pentachlorophenol, or of intermediates used to produce its derivatives.*

F022 *= Wastes from the manufacturing use of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.*

F023 *= Wastes from the production of materials on equipment previously used for the production or manufacturing use of tri- and tetrachlorophenols.*

F026 *= Wastes from the production of materials on equipment previously used for the manufacturing use of tetra-, penta-, or hexachlorobenezene under alkaline conditions.*

F027 *= Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols.*

F028 *= Residues resulting from the incineration or thermal treatment of soils contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.*

The following F-codes could also contain dioxins:

F032 *= Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have used chlorophenolic formulations.*

F039 *= Leachate resulting from the disposal of more than one restricted waste classified as hazardous under subpart D.*

The Waste was compared to the full list of F-coded waste, including those set out above, and it was determined that the Waste does not come within any of these waste descriptions.

2.2.2 Listed Hazardous Waste Codes from Specific Sources ("K" Codes)

Under the RCRA program, there are also a number of solid wastes listed as hazardous wastes under 40 CFR § 261.32 because they are generated from specifically named sources. The complete list of hazardous waste code descriptions from § 261.32 is provided in Attachment A. This list is subdivided into groups of wastes generated from several specific industrial categories, such as inorganic pigments, organic chemicals, pesticides, petroleum refining, and so forth. Since pulp and paper production is not one of these industrial categories, the Waste is not a K-listed waste.

2.2.3 Listed Hazardous Waste Codes from Commercial Chemical Products ("P" and "U" Codes)

The "P" and "U" codes are specific to unused commercial chemical products (CCP), off-specification materials, container and spill residues referenced by name at 40 CFR 261.33 (e) and (f). As noted in the Comment following § 261.33 (d), the CCP lists do not apply to "a material, such as a manufacturing process waste, that contains any of the substances listed in paragraph (e) or (f) [the "P" and "U" lists of CCPs]. Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in paragraph (e) or (f), such a waste will be listed in either § 261.31 or § 261.32 or will be identified as a hazardous waste by the characteristics set forth in subpart C of this part."

Since the Waste is a discarded manufacturing process waste, it is not included in the CCP lists in § 261.33. Moreover, as summarized above, the Waste is not listed in either § 261.31 or § 261.32; thus, the Waste is not a listed hazardous waste under the RCRA regulations.

2.3 Does the Waste Exhibit Characteristics of Hazardous Waste under RCRA?

Under RCRA, a solid waste may also be a hazardous waste if it exhibits any of the following four characteristics:

Ignitability (D001)

- Liquid with flash point < 140°F
- Solid capable of causing fire under standard temperature and pressure (STP) and burns vigorously when ignited to create a hazard
- Ignitable compressed gas
- Oxidizer (as defined by US Department of Transportation)

Corrosivity (D002)

- Aqueous with a pH of less than or equal to 2 or greater than or equal to 12.5
- Liquid which corrodes steel at a rate greater than 0.25 inch per year at temperature of 130°F

Reactivity (D003)

- Normally unstable and readily undergoes violent change without detonating.

- Reacts violently with water or forms potentially explosive mixtures with water. When mixed with water, generates toxic gases, vapors or fumes.
- Cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes.
- Capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.
- Capable of detonation or explosive decomposition or reaction at STP.
- It is a forbidden, Class A or Class B explosive in accordance with US Department of Transportation.

Toxicity (D004-D043)

- Exhibits the characteristic of toxicity, if using Toxicity Characteristic Leaching Procedure (TCLP) test method 1311, the extract from a representative sample of the waste contains any of the constituents listed in Table 1 at a concentration equal to or greater than the value for that constituent. See Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic at 40 CFR 261.24.
- Total of 40 regulated constituents: heavy metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ herbicides.

During PDI-1 and PDI-2, representative samples of the Waste were collected in accordance with *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA publication SW-846 (incorporated by reference in the RCRA regulations at 40 CFR 260.10), and tested to determine whether the Waste exhibits any of the characteristics of hazardous waste as defined in EPA regulations. The samples were collected at various locations across the Northern Impoundment as shown in Figure 1. The EPA defines “representative sample” at 40 CFR 260.10 as “a sample of a universe or whole (e.g.,waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole”. The material in the Northern Impoundment has previously been determined to consist of a single waste stream deposited into the Northern Impoundment over a brief period in the mid-1960s, where it has remained. During the PDI, a set of seven multi-increment composite waste characterization samples were collected from nine different physical locations at the Northern Impoundment. With the exception of the sample collected from the Pilot Test excavation (Composite 1), samples consisted of multiple 2-ft discrete interval samples composited over the total depth of the boring interval (total sample depths ranged from 9 to 20 feet below ground surface). For Composite 1, material was composited from multiple locations within the approximately 20 ft by 20 ft by 4 ft excavation. See Figure 1 for sample intervals. These samples included material with variable physical (moisture content, grain size, etc.), and chemical characteristics. Samples were also collected from areas in which the highest concentrations of dioxins had been detected in prior sampling. Based on the above, the samples meet the definition of “representative samples” under EPA’s regulations.

Based on waste characterization test data, the Waste in the Northern Impoundment does not exhibit the characteristics of ignitability, corrosivity, reactivity or toxicity as defined by the EPA regulations. This is demonstrated by confirmatory analyses conducted for pH (corrosivity), flash point (ignitability), reactive

cyanide/sulfide (reactivity) and TCLP constituent concentrations (toxicity). The TCLP tests on the Waste showed no exceedances for any of the D004 through D043 regulated constituents. These test results are provided in Attachment B. Therefore, the Waste is not a hazardous waste due to the existence of a characteristic of a hazardous waste.

2.4 How will Contaminated Media from the Northern Impoundment RA that will be Disposed of Off-Site be Classified Under EPA's "Contained-in" Policy?

Under the EPA's "contained-in" policy, contaminated media at a Superfund site is subject to regulation as a hazardous waste only if it "contains" a listed hazardous waste or exhibits a characteristic of a hazardous waste. In this case, any contaminated media to be disposed of off-site during the Northern Impoundment RA would not be a hazardous waste under RCRA because (1) it would not "contain" a listed hazardous waste (because the Waste is not a listed hazardous waste), and (2) the media would not exhibit a characteristic of hazardous waste (because the Waste is not a characteristic hazardous waste).

3. Conclusion

Based on an evaluation of information about the pulp and paper mill waste disposed of in the Northern Impoundment and the results of testing of the Waste that was performed during PDI-1 and PDI-2, the Waste is not a RCRA hazardous waste. GHD requests a concurrence from the EPA regarding the classification of Waste to be disposed of off-site during the Northern Impoundment RA.

Should you have any questions or require additional information regarding this submittal, please contact GHD at (225) 292-9007.

Sincerely,

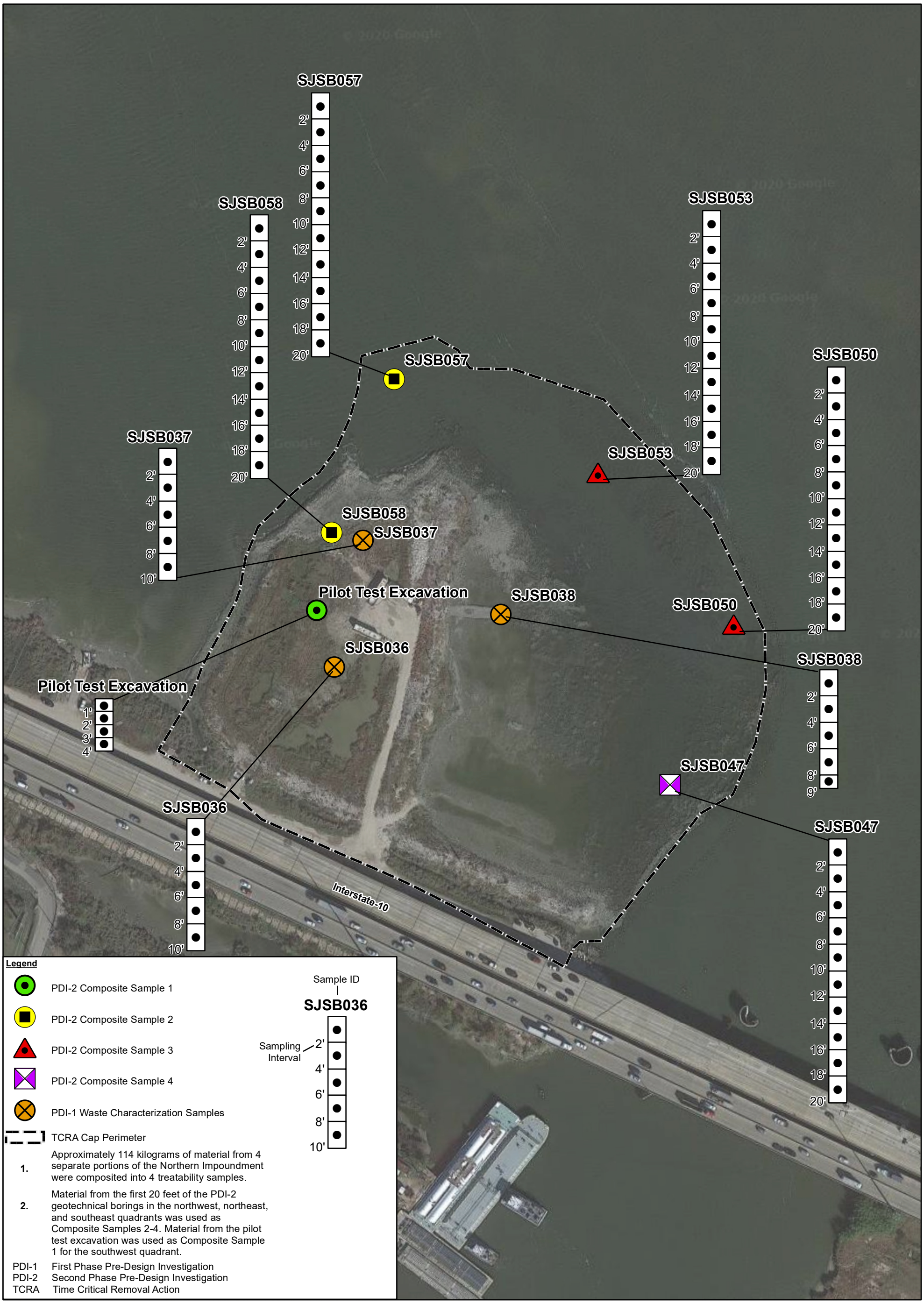
GHD

Charles W. Munce, P.E.

ETW/kdn/2

Encl.: Figure 1 - Northern Impoundment Waste Characterization Sample Locations
Attachment A - EPA Waste Code Descriptions
Attachment B - Analytical Data Tables

cc: Phil Slowiak, IPC
Brent Sasser, IPC
Judy Armour, MIMC
Katie Delbecq, Texas Commission on Environmental Quality



Source: Image ©2020 Google, Imagery date: 10/28/2017

0 75 150
Feet

Coordinate System:
NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

SAN JACINTO RIVER WASTE PITS SITE
HARRIS COUNTY, TEXAS

11215702
Oct 16, 2020

NORTHERN IMPOUNDMENT WASTE CHARACTERIZATION SAMPLE LOCATIONS

FIGURE 1

GIS File: \\ghdnet\ghd\US\Baton Rouge\Projects\562\11215702\GIS\Maps\Deliverables\MISC001\11215702_202007_MISC001_GIS003.mxd

Attachment A
EPA Waste Code Descriptions
(Title 40 CFR §261.31 and §261.32)

must be used in complying with the notification requirements of Section 3010 of the Act and certain recordkeeping and reporting requirements under parts 262 through 265, 267, 268, and 270 of this chapter.

(d) The following hazardous wastes listed in § 261.31 are subject to the exclusion limits for acutely hazardous wastes established in § 261.5: EPA Hazardous Wastes Nos. F020, F021, F022, F023, F026 and F027.

[45 FR 33119, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 50 FR 2000, Jan. 14, 1985; 51 FR 40636, Nov. 7, 1986; 55 FR 11863, Mar. 29, 1990; 75 FR 13002, Mar. 18, 2010]

§ 261.31 Hazardous wastes from non-specific sources.

(a) The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under §§ 260.20 and 260.22 and listed in appendix IX.

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Generic:		
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I)*
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I,T)
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	(T)
F007	Spent cyanide plating bath solutions from electroplating operations	(R, T)
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	(R, T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(R, T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	(R, T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	(R, T)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process. Wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process will not be subject to this listing at the point of generation if the wastes are not placed outside on the land prior to shipment to a landfill for disposal and are either: disposed in a Subtitle D municipal or industrial landfill unit that is equipped with a single clay liner and is permitted, licensed or otherwise authorized by the state; or disposed in a landfill unit subject to, or otherwise meeting, the landfill requirements in § 258.40, § 264.301 or § 265.301. For the purposes of this listing, motor vehicle manufacturing is defined in paragraph (b)(4)(i) of this section and (b)(4)(ii) of this section describes the recordkeeping requirements for motor vehicle manufacturing facilities.	(T)
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	(H)
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	(H)
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.).	(T)
F025	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	(T)
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.	(H)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene sythesized from prepurified 2,4,5-trichlorophenol as the sole component.).	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.	(T)
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with § 261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under §261.4(a)(12)(i), if those residuals are to be disposed of.	(T)
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge—Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.	(T)
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).	(T)

*(I,T) should be used to specify mixtures that are ignitable and contain toxic constituents.

(b) Listing Specific Definitions: (1) For the purposes of the F037 and F038 listings, oil/water/solids is defined as oil and/or water and/or solids.(2) (i) For the purposes of the F037 and F038 listings, aggressive biological treatment units are defined as units which employ one of the following four treatment methods: activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (A) the units employ a minimum of 6 hp per million gallons of treatment volume; and either (B) the hydraulic retention time of the unit is no longer than 5 days; or (C) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

(ii) Generators and treatment, storage and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes under this definition. Generators and treatment, storage and disposal facilities must maintain, in their operating or other onsite records, documents and data sufficient to prove that: (A) the unit is an aggressive biological treatment unit as defined in this subsection; and (B) the sludges sought to be exempted from the definitions of F037 and/or F038 were actually generated in the aggressive biological treatment unit.

(3) (i) For the purposes of the F037 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement.

(ii) For the purposes of the F038 listing, (A) sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement and (B) floats are considered to be generated at the moment they are formed in the top of the unit.

(4) For the purposes of the F019 listing, the following apply to wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process.

(i) Motor vehicle manufacturing is defined to include the manufacture of automobiles and light trucks/utility vehicles (including light duty vans, pick-up trucks, minivans, and sport utility vehicles). Facilities must be engaged in manufacturing complete vehicles (body and chassis or unibody) or chassis only.

(ii) Generators must maintain in their on-site records documentation and information sufficient to prove that the wastewater treatment sludges to be exempted from the F019 listing meet the conditions of the listing. These records must include: the volume of waste generated and disposed of off site; documentation showing when the waste volumes were generated and sent off site; the name and address of the receiving facility; and documentation confirming receipt of the waste by the receiving facility. Generators must maintain these documents on site for no less than three years. The retention period for the documentation is automatically extended during the course of any enforcement action or as requested by the Regional Administrator or the state regulatory authority.

[46 FR 4617, Jan. 16, 1981]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 261.31, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.fdsys.gov.

§ 261.32 Hazardous wastes from specific sources.

(a)The following solid wastes are listed hazardous wastes from specific sources unless they are excluded under §§ 260.20 and 260.22 and listed in appendix IX.

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Wood preservation: K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
Inorganic pigments:		
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	(T)
K003	Wastewater treatment sludge from the production of molybdate orange pigments	(T)
K004	Wastewater treatment sludge from the production of zinc yellow pigments	(T)
K005	Wastewater treatment sludge from the production of chrome green pigments	(T)
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	(T)
K007	Wastewater treatment sludge from the production of iron blue pigments	(T)
K008	Oven residue from the production of chrome oxide green pigments	(T)
Organic chemicals:		
K009	Distillation bottoms from the production of acetaldehyde from ethylene	(T)
K010	Distillation side cuts from the production of acetaldehyde from ethylene	(T)
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile	(R, T)
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile	(R, T)
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile	(T)
K015	Still bottoms from the distillation of benzyl chloride	(T)
K016	Heavy ends or distillation residues from the production of carbon tetrachloride	(T)
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	(T)
K018	Heavy ends from the fractionation column in ethyl chloride production	(T)
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	(T)
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production	(T)
K021	Aqueous spent antimony catalyst waste from fluoromethanes production	(T)
K022	Distillation bottom tars from the production of phenol/acetone from cumene	(T)
K023	Distillation light ends from the production of phthalic anhydride from naphthalene	(T)
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene	(T)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
K026	Stripping still tails from the production of methy ethyl pyridines	(T)
K027	Centrifuge and distillation residues from toluene diisocyanate production	(R, T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	(T)
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	(T)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	(T)
K083	Distillation bottoms from aniline production	(T)
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes	(T)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane	(T)
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	(T)
K103	Process residues from aniline extraction from the production of aniline	(T)
K104	Combined wastewater streams generated from nitrobenzene/aniline production	(T)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	(T)
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.	(C,T)
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(I,T)
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	(C,T)
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	(T)
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	(T)
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzyl chloride.).	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K159	Organics from the treatment of thiocarbamate wastes	(T)
K161	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.).	(R,T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a subtitle C or non-hazardous landfill licensed or permitted by the state or federal government; (ii) they are not otherwise placed on the land prior to final disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (e.g., contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, etc.) that the terms of the exclusion were met.	(T)
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	(T)
K181	Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c) of this section that are equal to or greater than the corresponding paragraph (c) levels, as determined on a calendar year basis. These wastes will not be hazardous if the nonwastewaters are: (i) disposed in a Subtitle D landfill unit subject to the design criteria in § 258.40, (ii) disposed in a Subtitle C landfill unit subject to either § 264.301 or § 265.301, (iii) disposed in other Subtitle D landfill units that meet the design criteria in § 258.40, § 264.301, or § 265.301, or (iv) treated in a combustion unit that is permitted under Subtitle C, or an onsite combustion unit that is permitted under the Clean Air Act. For the purposes of this listing, dyes and/or pigments production is defined in paragraph (b)(1) of this section. Paragraph (d) of this section describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under §§ 261.21–261.24 and 261.31–261.33 at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met.	(T)
Inorganic chemicals:		
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	(T)
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	(T)
K106	Wastewater treatment sludge from the mercury cell process in chlorine production	(T)
K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e.g., antimony metal or crude antimony oxide).	(E)
K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (e.g., antimony metal or crude antimony oxide).	(T)
K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process.	(T)
Pesticides:		
K031	By-product salts generated in the production of MSMA and cacodylic acid	(T)
K032	Wastewater treatment sludge from the production of chlordane	(T)
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	(T)
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	(T)
K035	Wastewater treatment sludges generated in the production of creosote	(T)
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton	(T)
K037	Wastewater treatment sludges from the production of disulfoton	(T)
K038	Wastewater from the washing and stripping of phorate production	(T)
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	(T)
K040	Wastewater treatment sludge from the production of phorate	(T)
K041	Wastewater treatment sludge from the production of toxaphene	(T)
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	(T)
K098	Untreated process wastewater from the production of toxaphene	(T)
K099	Untreated wastewater from the production of 2,4-D	(T)
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	(C, T)
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	(T)
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	(T)
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	(C, T)
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	(T)
Explosives:		
K044	Wastewater treatment sludges from the manufacturing and processing of explosives	(R)
K045	Spent carbon from the treatment of wastewater containing explosives	(R)
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	(T)
K047	Pink/red water from TNT operations	(R)
Petroleum refining:		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry	(T)
K049	Slop oil emulsion solids from the petroleum refining industry	(T)
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
K051	API separator sludge from the petroleum refining industry	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry	(T)
K169	Crude oil storage tank sediment from petroleum refining operations	(T)
K170	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations.	(T)
K171	Spent Hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
K172	Spent Hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
Iron and steel:		
K061	Emission control dust/sludge from the primary production of steel in electric furnaces	(T)
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	(C,T)
Primary aluminum:		
K088	Spent potliners from primary aluminum reduction	(T)
Secondary lead:		
K069	Emission control dust/sludge from secondary lead smelting. (NOTE: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the FEDERAL REGISTER).	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary pharmaceuticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
Ink formulation:		
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	(T)
Coking:		
K060	Ammonia still lime sludge from coking operations	(T)
K087	Decanter tank tar sludge from coking operations	(T)
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).	(T)
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	(T)
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	(T)
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.	(T)
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
K147	Tar storage tank residues from coal tar refining	(T)
K148	Residues from coal tar distillation, including but not limited to, still bottoms	(T)

(b) *Listing Specific Definitions:* (1) For the purposes of the K181 listing, dyes and/or pigments production is defined to include manufacture of the following product classes: dyes, pigments, or FDA certified colors that are classified as azo, triarylmethane, perylene or anthraquinone classes. Azo products include azo, monoazo, diazo, triazo, polyazo, azoic, benzidine, and pyrazolone products. Triarylmethane products include both triarylmethane and triphenylmethane products. Wastes that are not generated at a dyes and/or pigments manufacturing site, such as wastes from the offsite use, formulation, and packaging of dyes and/or pigments, are not included in the K181 listing.

(c) *K181 Listing Levels.* Nonwastewaters containing constituents in amounts equal to or exceeding the following levels during any calendar year are subject to the K181 listing, unless the conditions in the K181 listing are met.

Constituent	Chemical abstracts No.	Mass levels (kg/yr)
Aniline	62–53–3	9,300
o-Anisidine	90–04–0	110
4-Chloroaniline	106–47–8	4,800
p-Cresidine	120–71–8	660
2,4-Dimethylaniline	95–68–1	100
1,2-Phenylenediamine	95–54–5	710
1,3-Phenylenediamine	108–45–2	1,200

(d) *Procedures for demonstrating that dyes and/or pigment nonwastewaters are not K181.* The procedures described in paragraphs (d)(1)–(d)(3) and (d)(5) of this section establish when nonwastewaters from the production of dyes/pigments would not be hazardous (these procedures apply to wastes that are not disposed in landfill units or treated in combustion units as specified in paragraph (a) of this section). If the nonwastewaters are disposed in landfill units or treated in combustion units as described in paragraph (a) of this section, then the nonwastewaters are not hazardous. In order to demonstrate that it is meeting the landfill disposal or combustion conditions contained in the K181 listing description, the generator must maintain documentation as described in paragraph (d)(4) of this section.

(1) *Determination based on no K181 constituents.* Generators that have knowledge (e.g., knowledge of constituents in wastes based on prior sampling and analysis data and/or information about raw materials used, production processes used, and reaction and degradation products formed) that their wastes contain none of the K181 constituents (*see* paragraph (c) of this section) can use their knowledge to determine that their waste is not K181. The generator must document the basis for all such determinations on an annual basis and keep each annual documentation for three years.

(2) *Determination for generated quantities of 1,000 MT/yr or less for wastes that contain K181 constituents.* If the total annual quantity of dyes and/or pigment nonwastewaters generated is 1,000 metric tons or less, the generator can use knowledge of the wastes (e.g., knowledge of constituents in wastes based on prior analytical data and/or information about raw materials used, production processes used, and reaction and degradation products formed) to conclude that annual mass loadings for the K181 constituents are below the listing levels of paragraph (c) of this section. To make this determination, the generator must:

(i) Each year document the basis for determining that the annual quantity of nonwastewaters expected to be generated will be less than 1,000 metric tons.

(ii) Track the actual quantity of nonwastewaters generated from January 1 through December 31 of each year. If, at any time within the year, the actual waste quantity exceeds 1,000 metric tons, the generator must comply with the requirements of paragraph (d)(3) of this section for the remainder of the year.

(iii) Keep a running total of the K181 constituent mass loadings over the course of the calendar year.

(iv) Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made:

(A) The quantity of dyes and/or pigment nonwastewaters generated.

(B) The relevant process information used.

(C) The calculations performed to determine annual total mass loadings for each K181 constituent in the nonwastewaters during the year.

(3) *Determination for generated quantities greater than 1,000 MT/yr for wastes that contain K181 constituents.* If the total annual quantity of dyes and/or pigment nonwastewaters generated is greater than 1,000 metric tons, the generator must perform all of the steps described in paragraphs ((d)(3)(i)–(d)(3)(xi) of this section) in order to make a determination that its waste is not K181.

(i) Determine which K181 constituents (see paragraph (c) of this section) are reasonably expected to be present in the wastes based on knowledge of the wastes (e.g., based on prior sampling and analysis data and/or information about raw materials used, production processes used, and reaction and degradation products formed).

(ii) If 1,2-phenylenediamine is present in the wastes, the generator can use either knowledge or sampling and analysis procedures to determine the level of this constituent in the wastes. For determinations based on use of knowledge, the generator must comply with the procedures for using knowledge described in paragraph (d)(2) of this section and keep the records described in paragraph (d)(2)(iv) of this section. For determinations based on sampling and analysis, the generator must comply with the sampling and analysis and recordkeeping requirements described below in this section.

(iii) Develop a waste sampling and analysis plan (or modify an existing plan) to collect and analyze representative waste samples for the K181 constituents reasonably expected to be present in the wastes. At a minimum, the plan must include:

(A) A discussion of the number of samples needed to characterize the wastes fully;

(B) The planned sample collection method to obtain representative waste samples;

(C) A discussion of how the sampling plan accounts for potential temporal and spatial variability of the wastes.

(D) A detailed description of the test methods to be used, including sample preparation, clean up (if necessary), and determinative methods.

(iv) Collect and analyze samples in accordance with the waste sampling and analysis plan.

(A) The sampling and analysis must be unbiased, precise, and representative of the wastes.

(B) The analytical measurements must be sufficiently sensitive, accurate and precise to support any claim that the constituent mass loadings are below the listing levels of paragraph (c) of this section.

(v) Record the analytical results.

(vi) Record the waste quantity represented by the sampling and analysis results.

(vii) Calculate constituent-specific mass loadings (product of concentrations and waste quantity).

(viii) Keep a running total of the K181 constituent mass loadings over the course of the calendar year.

(ix) Determine whether the mass of any of the K181 constituents listed in paragraph (c) of this section generated between January 1 and December 31 of any year is below the K181 listing levels.

(x) Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made:

(A) The sampling and analysis plan.

(B) The sampling and analysis results (including QA/QC data)

(C) The quantity of dyes and/or pigment nonwastewaters generated.

(D) The calculations performed to determine annual mass loadings.

(xi) Nonhazardous waste determinations must be conducted annually to verify that the wastes remain nonhazardous.

(A) The annual testing requirements are suspended after three consecutive successful annual demonstrations that

the wastes are nonhazardous. The generator can then use knowledge of the wastes to support subsequent annual determinations.

(B) The annual testing requirements are reinstated if the manufacturing or waste treatment processes generating the wastes are significantly altered, resulting in an increase of the potential for the wastes to exceed the listing levels.

(C) If the annual testing requirements are suspended, the generator must keep records of the process knowledge information used to support a nonhazardous determination. If testing is reinstated, a description of the process change must be retained.

(4) *Recordkeeping for the landfill disposal and combustion exemptions.* For the purposes of meeting the landfill disposal and combustion condition set out in the K181 listing description, the generator must maintain on site for three years documentation demonstrating that each shipment of waste was received by a landfill unit that is subject to or meets the landfill design standards set out in the listing description, or was treated in combustion units as specified in the listing description.

(5) *Waste holding and handling.* During the interim period, from the point of generation to completion of the hazardous waste determination, the generator is responsible for storing the wastes appropriately. If the wastes are determined to be hazardous and the generator has not complied with the subtitle C requirements during the interim period, the generator could be subject to an enforcement action for improper management.

[46 FR 4618, Jan. 16, 1981]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 261.32, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.fdsys.gov.

§ 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in § 261.2(a)(2)(i), when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment, when they are otherwise applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use, or when, in lieu of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel.

(a) Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section.

(b) Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.

(c) Any residue remaining in a container or in an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this section, unless the container is empty as defined in § 261.7(b) of this chapter.

[*Comment:* Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed; or being accumulated, stored, transported or treated prior to such use, re-use, recycling or reclamation, EPA considers the residue to be intended for discard, and thus, a hazardous waste. An example of a legitimate re-use of the residue would be where the residue remains in the container and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residue.]

(d) Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification chemical product and manufacturing chemical intermediate

Attachment B
Analytical Data Tables
(Northern Impoundment Pre-Design Investigations)

Table 1

First Phase Pre-Design Investigation Waste Characterization Results
San Jacinto River Waste Pits Site
Harris County, Texas

Parameters	Units	TCLP Regulatory Levels[1]	Method Detection Limits[2]	Area: Northern Impoundment - East Sample Location: SJSB038 Sample Identification: SL0594 Sample Date: 12/18/2018	Northern Impoundment - West SJSB037 SL0547 11/15/18	Northern Impoundment - West SJSB036 SL0554 11/16/18
				-	-	-
TCLP-Volatile Organic Compounds (VOCs)						
1,1-Dichloroethene	mg/L	0.7	0.00008	0.20 U	0.032 U	0.032 U
1,2-Dichloroethane	mg/L	0.5	0.00008	0.20 U	0.032 U	0.032 U
1,4-Dichlorobenzene	mg/L	7.5	0.00032	0.20 U	0.048 U	0.048 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	200.0	0.0019	8.0 U	0.76 U	0.76 U
Benzene	mg/L	0.5	0.000062	0.20 U	0.025 U	0.025 U
Carbon tetrachloride	mg/L	0.5	0.000096	0.20 U	0.039 U	0.039 U
Chlorobenzene	mg/L	100.0	0.00011	0.20 U	0.044 U	0.044 U
Chloroform (Trichloromethane)	mg/L	6.0	0.000072	0.20 U	0.029 U	0.029 U
Tetrachloroethene	mg/L	0.7	0.000099	0.20 U	0.040 U	0.040 U
Trichloroethene	mg/L	0.5	0.0001	0.20 U	0.040 U	0.040 U
Vinyl chloride	mg/L	0.2	0.000075	0.080 U	0.030 U	0.030 U
TCLP-Semi-Volatile Organic Compounds (SVOCs)						
2,4,5-Trichlorophenol	mg/L	400.0	0.000018	0.10 U	0.013 U	0.013 U
2,4,6-Trichlorophenol	mg/L	2.0	0.000014	0.10 U	0.011 U	0.0099 U
2,4-Dinitrotoluene	mg/L	0.13	0.00027	0.10 U	0.020 U	0.019 U
2-Methylphenol	mg/L	200.0	0.00033	0.10 U	0.013 U	0.013 U
4-Methylphenol	mg/L	200.0	0.00048	0.10 U	0.0070 U	0.0067 U
Hexachlorobenzene	mg/L	0.13	0.00063	0.10 U	0.014 U	0.014 U
Hexachlorobutadiene	mg/L	0.5	0.00029	0.10 U	0.0095 U	0.0091 U
Hexachloroethane	mg/L	3.0	0.00029	0.10 U	0.0071 U	0.0068 U
Nitrobenzene	mg/L	2.0	0.00057	0.10 U	0.012 U	0.012 U
Pentachlorophenol	mg/L	100.0	0.0024	0.25 U	0.016 U	0.016 U
Pyridine	mg/L	5.0	0.0075	0.50 U	0.38 U	0.36 U
TCLP-Pesticides						
Chlordane	mg/L	0.03	0.0001	0.0010 U	0.0010 U	0.0010 U
Endrin	mg/L	0.02	0.00000069	0.00010 U	0.00010 U	0.00010 U
gamma-BHC (lindane)	mg/L	0.3	0.00000036	0.00010 U	0.00010 U	0.00010 U
Heptachlor	mg/L	0.008	0.00000068	0.00010 U	0.00010 U	0.00010 U
Heptachlor epoxide	mg/L	0.04	0.00000084	0.00010 U	0.00010 U	0.00010 U
Methoxychlor	mg/L	10.0	0.0000001	0.00010 U	0.00010 U	0.00010 U
Toxaphene	mg/L	0.5	0.0002	0.0020 U	0.0020 U	0.0020 U
TCLP-Metals						
Arsenic	mg/L	5.0	0.005	0.020 U	0.021 J	0.020 U
Barium	mg/L	100.0	0.0006	0.9 J	1.6	1.4
Cadmium	mg/L	1.0	0.0005	0.050 U	0.002 J	0.001 J
Chromium	mg/L	5.0	0.0009	0.050 U	0.010 U	0.010 U
Lead	mg/L	5.0	0.005	0.050 U	0.015 U	0.015 U
Mercury	mg/L	0.2	0.00002	0.0010 U	0.0001 U	0.0001 U
Selenium	mg/L	1.0	0.009	0.10 U	0.02 U	0.02 J
Silver	mg/L	5.0	0.002	0.050 U	0.004 U	0.004 U
TCLP-Herbicides						
2,4,5-TP (Silvex)	mg/L	1.0	0.000036	0.020 U	0.030 U	0.029 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	10.0	0.000045	0.100 U	0.150 U	0.150 U
General Chemistry						
Flash point (closed cup)	°C	> 60	NA	> 110	> 110	> 110
Percent solids	%	NA	NA	45.9 J	67.1 J	70.0 J
pH, lab	s.u.	>2 or <12	NA	7.84	8.09 J	8.54 J
Reactive cyanide	mg/kg	NA	17.4	17 U	100 U	100 U
Reactive sulfide	mg/kg	NA	0.2	70 U	48 U	46 U
Sulfur	mg/kg	NA	0.46	---	---	---
Total Petroleum Hydrocarbons (TPH)						
Gasoline Range Organics (GRO)	mg/kg	>1500[3]	0.62	---	---	---
Diesel Range Organics (DRO)	mg/kg	>1500[3]	0.79	---	---	---
Residual Range Organics (RRO)	mg/kg	>1500[3]	2.9	---	---	---
Polychlorinated Biphenyls (PCBs)						
Aroclor 1016	mg/kg	NA	2.1	---	---	---
Aroclor 1221	mg/kg	NA	2.1	---	---	---
Aroclor 1232	mg/kg	NA	2.1	---	---	---
Aroclor 1242	mg/kg	NA	2.1	---	---	---
Aroclor 1248	mg/kg	NA	2.1	---	---	---
Aroclor 1254	mg/kg	NA	2.1	---	---	---
Aroclor 1260	mg/kg	NA	2.1	---	---	---
Aroclor 1262	mg/kg	NA	2.1	---	---	---
Aroclor 1268	mg/kg	NA	2.1	---	---	---

Notes:

TCLP - Toxicity Characteristic Leaching Procedure
mg/L - milligrams per Liter
ug/L - microgram per Liter
mg/kg - milligram per kilogram
Deg C - Degrees in Celsius
TCLP - Toxicity Characteristic Leaching Procedure

NA - Not Applicable
s.u. - standard unit
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
--- - Not analyzed

[1] - TCLP Regulatory Levels from the *Guidelines for the Classification and Coding of Industrial and Hazardous Wastes* , November 2014, and Table 1 - Maximum Concentrations.

[2] - Method Detection Limits were taken from *Table 9 Analyte, Method Reporting Limits, and Method Detection Limits for Waste Characterization Samples* from the First Phase Pre-Design Investigation Report.

[3] - TPH Regulatory Standard is a Total value, not a TCLP.

Table 2

Second Phase Pre-Design Investigation Composite Sample Results
San Jacinto River Waste Pits Site
Harris County, Texas

Area: Sample Location: Sample Identification: Sample Date: Report Sample Delivery Group (SDG):	Units	Initial Sample - Southwest Initial 11187072-NORTH-IMPCT-INITIALS 10/15/2019 180-97287-1, 180-97287-2	Composite Sample 2 - Northwest Area 2 11187072-N.TREATMENT AREA #2 12/18/2019 180-100205-1	Composite Sample 3 - Northeast Area 3 11187072-N.TREATMENT AREA #3 12/18/2019 180-100205-1	Composite Sample 4 - Southeast Area 4 11187072-N.TREATMENT AREA #4 12/18/2019 180-100205-1
General Chemistry					
Cyanide (total)	mg/kg	0.43 U	0.37 U	0.40 U	0.40 U
Free liquid	none	U	U	U	U
Ignitability	Deg F	> 140	> 140	> 140	> 140
Percent solids	%	--	71.4	67.4	66.7
pH, lab	s.u.	7.9 J	8.5 J	8.7 J	7.9 J
Sulfide	mg/kg	76 J	72	59	24 J
TCLP-Dioxins/Furans					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	7.6 U	95 J	19 U	16 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	34 U	77 J	11 U	9.9 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	5.3 U	9.0 U	8.5 U	8.3 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	3.4 U	23 J	7.5 U	5.9 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	6.2 U	31 J	12 U	11 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	2.9 U	15 U	12 U	10 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	4.5 U	20 J	8.7 U	6.9 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	3.1 U	13 U	11 U	11 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	4.7 U	7.9 U	9.2 U	7.5 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	2.2 U	15 J	7.3 U	7.1 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	4.3 U	6.7 U	7.9 U	6.3 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	4.6 U	10 U	8.4 U	8.3 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	8.4 U	19 U	20 U	16 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	2.5 U	9.2 U	7.5 U	6.8 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	4.6 U	11 U	9.2 U	9.4 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	2.8 U	11 J	6.5 U	6.6 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	3.4 U	12 U	12 U	12 U
Total heptachlorodibenzofuran (HpCDF)	pg/L	6.2 U	31 J	12 U	11 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	10 U	23 J	7.5 U	5.9 U
Total hexachlorodibenzofuran (HxCDF)	pg/L	3.1 U	15 J	12 U	11 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	4.7 U	20 J	9.2 U	7.5 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	4.6 U	11 U	9.2 U	9.4 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	8.4 U	19 U	20 U	16 U
Total tetrachlorodibenzofuran (TCDF)	pg/L	2.8 U	11 J	6.5 U	6.6 U
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	4.4 J	12 U	12 U	12 U
TCLP-Glycol					
2-Ethoxyethanol	mg/L	2.5 U	2.5 U	2.5 U	2.5 U
Ethylene glycol	mg/L	1.9 U	1.9 U	1.9 U	1.9 U
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	2.4 U	2.4 U	2.4 U	2.4 U
TCLP-Herbicides					
2,4,5-TP (Silvex)	mg/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	0.020 U	0.020 U	0.020 U	0.020 U
Dinoseb	mg/L	0.038 U	0.038 U	0.038 U	0.038 U
TCLP-Metals					
Arsenic	mg/L	0.041 U	0.041 U	0.041 U	0.041 U
Barium	mg/L	1.1 J	0.53 J	0.44 J	0.48 J
Cadmium	mg/L	0.0028 U	0.0028 U	0.0028 U	0.0028 U
Chromium	mg/L	0.0078 U	0.0078 U	0.011 J	0.0078 U
Lead	mg/L	0.029 U	0.029 U	0.029 U	0.029 U
Mercury	mg/L	0.00010 U	0.00010 U	0.00010 U	0.00010 U
Selenium	mg/L	0.036 U	0.036 U	0.036 U	0.036 U
Silver	mg/L	0.0085 U	0.0085 U	0.0085 U	0.0085 U

Table 2

Second Phase Pre-Design Investigation Composite Sample Results
San Jacinto River Waste Pits Site
Harris County, Texas

Area: Sample Location: Sample Identification: Sample Date: Report Sample Delivery Group (SDG):	Units	Initial Sample - Southwest Initial 11187072-NORTH-IMPCT-INITIALS 10/15/2019 180-97287-1, 180-97287-2	Composite Sample 2 - Northwest Area 2 11187072-N.TREATMENT AREA #2 12/18/2019 180-100205-1	Composite Sample 3 - Northeast Area 3 11187072-N.TREATMENT AREA #3 12/18/2019 180-100205-1	Composite Sample 4 - Southeast Area 4 11187072-N.TREATMENT AREA #4 12/18/2019 180-100205-1
Misc					
Methomyl	ug/L	0.12 U	0.13 U	0.12 U	0.13 U
TCLP-PCBs					
Aroclor-1016 (PCB-1016)	mg/L	0.00018 U	0.00019 U	0.00019 U	0.00019 U
Aroclor-1221 (PCB-1221)	mg/L	0.00022 U	0.00022 U	0.00023 U	0.00023 U
Aroclor-1232 (PCB-1232)	mg/L	0.00020 U	0.00020 U	0.00021 U	0.00021 U
Aroclor-1242 (PCB-1242)	mg/L	0.00035 U	0.00036 U	0.00036 U	0.00036 U
Aroclor-1248 (PCB-1248)	mg/L	0.00012 U	0.00012 U	0.00012 U	0.00012 U
Aroclor-1254 (PCB-1254)	mg/L	0.00037 U	0.00037 U	0.00038 U	0.00038 U
Aroclor-1260 (PCB-1260)	mg/L	0.00015 U	0.00015 U	0.00016 U	0.00016 U
TCLP-Pesticides					
4,4'-DDD	mg/L	0.00021 U	0.00021 U	0.00021 U	0.00021 U
4,4'-DDE	mg/L	0.00012 U	0.00012 U	0.00012 U	0.00012 U
4,4'-DDT	mg/L	0.00012 U	0.00012 U	0.00012 U	0.00012 U
alpha-Chlordane	mg/L	--	0.00015 U	0.00015 U	0.00015 U
Chlordane	mg/L	0.0029 U	0.0029 U	0.0029 U	0.0029 U
Dieldrin	mg/L	0.00011 U	0.00011 U	0.00011 U	0.00011 U
Endosulfan I	mg/L	0.00027 U	0.00027 U	0.00027 U	0.00027 U
Endosulfan II	mg/L	0.00013 U	0.00013 U	0.00013 U	0.00013 U
Endosulfan sulfate	mg/L	0.00026 U	0.00026 U	0.00026 U	0.00026 U
Endrin	mg/L	0.000091 U	0.000091 U	0.000091 U	0.000091 U
gamma-BHC (lindane)	mg/L	0.00012 U	0.00012 U	0.00012 U	0.00012 U
gamma-Chlordane	mg/L	--	0.00016 U	0.00016 U	0.00016 U
Heptachlor	mg/L	0.00018 U	0.00018 U	0.00018 U	0.00018 U
Heptachlor epoxide	mg/L	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Methoxychlor	mg/L	0.00031 U	0.00031 U	0.00031 U	0.00031 U
Mirex	mg/L	0.000084 U	0.000084 U	0.000084 U	0.000084 U
Toxaphene	mg/L	0.020 U	0.020 U	0.020 U	0.020 U
TCLP-Semi-Volatile Organic Compounds (SVOCs)					
1,4-Dichlorobenzene	mg/L	0.0045 U	0.0045 U	0.0045 U	0.0045 U
2,4,5-Trichlorophenol	mg/L	0.0079 U	0.0079 U	0.0079 U	0.0079 U
2,4,6-Trichlorophenol	mg/L	0.0095 U	0.0095 U	0.0095 U	0.0095 U
2,4-Dinitrotoluene	mg/L	0.0079 U	0.0079 U	0.0079 U	0.0079 U
2-Methylphenol	mg/L	0.0040 U	0.0040 U	0.0040 U	0.0040 U
3&4-Methylphenol	mg/L	0.0079 U	0.0079 U	0.0079 U	0.0079 U
Hexachlorobenzene	mg/L	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Hexachlorobutadiene	mg/L	0.0084 U	0.0084 U	0.0084 U	0.0084 U
Hexachloroethane	mg/L	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Nitrobenzene	mg/L	0.012 U	0.012 U	0.012 U	0.012 U
Pentachlorophenol	mg/L	0.0075 U	0.0075 U	0.0075 U	0.0075 U
Pyridine	mg/L	0.0082 U	0.0082 U	0.0082 U	0.0082 U

Table 2

Second Phase Pre-Design Investigation Composite Sample Results
San Jacinto River Waste Pits Site
Harris County, Texas

Area: Sample Location: Sample Identification: Sample Date: Report Sample Delivery Group (SDG):	Units	Initial Sample - Southwest Initial 11187072-NORTH-IMPCT-INITIALS 10/15/2019 180-97287-1, 180-97287-2	Composite Sample 2 - Northwest Area 2 11187072-N.TREATMENT AREA #2 12/18/2019 180-100205-1	Composite Sample 3 - Northeast Area 3 11187072-N.TREATMENT AREA #3 12/18/2019 180-100205-1	Composite Sample 4 - Southeast Area 4 11187072-N.TREATMENT AREA #4 12/18/2019 180-100205-1
TCLP-Volatile Organic Compounds (VOCs)					
1,1,1,2-Tetrachloroethane	mg/L	0.16 U	0.16 U	0.16 U	0.16 U
1,1,1-Trichloroethane	mg/L	0.10 U	0.10 U	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	mg/L	0.12 U	0.12 U	0.12 U	0.12 U
1,1,2-Trichloroethane	mg/L	0.096 U	0.096 U	0.096 U	0.096 U
1,1-Dichloroethene	mg/L	0.11 U	0.11 U	0.11 U	0.11 U
1,2,3-Trichloropropane	mg/L	0.11 U	0.11 U	0.11 U	0.11 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.11 U	0.11 U	0.11 U	0.11 U
1,2-Dichloroethane	mg/L	0.058 U	0.058 U	0.058 U	0.058 U
1,3-Dichloropropene	mg/L	0.13 U	0.13 U	0.13 U	0.13 U
1,4-Dichlorobenzene	mg/L	0.041 U	0.041 U	0.041 U	0.041 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.12 U	0.12 U	0.12 U	0.12 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.074 U	0.074 U	0.074 U	0.074 U
Acetone	mg/L	0.13 U	0.13 U	0.13 U	0.13 U
Acetonitrile	mg/L	2.0 U	2.0 U	2.0 U	2.0 U
Acrylonitrile	mg/L	1.3 U	1.3 U	1.3 U	1.3 U
Benzene	mg/L	0.079 U	0.079 U	0.079 U	0.079 U
Bromodichloromethane	mg/L	0.094 U	0.094 U	0.094 U	0.094 U
Bromoform	mg/L	0.10 U	0.10 U	0.10 U	0.10 U
Bromomethane (Methyl bromide)	mg/L	0.18 U	0.18 U	0.18 U	0.18 U
Carbon disulfide	mg/L	0.12 U	0.12 U	0.12 U	0.12 U
Carbon tetrachloride	mg/L	0.13 U	0.13 U	0.13 U	0.13 U
Chlorobenzene	mg/L	0.063 U	0.063 U	0.063 U	0.063 U
Chloroform (Trichloromethane)	mg/L	0.085 U	0.085 U	0.085 U	0.085 U
Dichlorodifluoromethane (CFC-12)	mg/L	0.12 U	0.12 U	0.12 U	0.12 U
Ethylbenzene	mg/L	0.086 U	0.086 U	0.086 U	0.086 U
Hexachlorobutadiene	mg/L	0.073 U	0.073 U	0.073 U	0.073 U
Isobutanol (isobutyl alcohol)	mg/L	3.6 U	3.6 U	3.6 U	3.6 U
Methyl acrylonitrile	mg/L	1.6 U	1.6 U	1.6 U	1.6 U
Methylene chloride	mg/L	0.15 U	0.15 U	0.15 U	0.15 U
Styrene	mg/L	0.053 U	0.053 U	0.053 U	0.053 U
Tetrachloroethene	mg/L	0.080 U	0.080 U	0.080 U	0.080 U
Toluene	mg/L	0.067 U	0.067 U	0.067 U	0.067 U
trans-1,3-Dichloropropene	mg/L	0.069 U	0.069 U	0.069 U	0.069 U
Trichloroethene	mg/L	0.060 U	0.060 U	0.060 U	0.060 U
Trichlorofluoromethane (CFC-11)	mg/L	0.058 U	0.058 U	0.058 U	0.058 U
Vinyl chloride	mg/L	0.15 U	0.15 U	0.15 U	0.15 U
Xylenes (total)	mg/L	0.17 U	0.17 U	0.17 U	0.17 U

Notes:
TCLP - Toxicity Characteristic Leaching Procedure
mg/L - milligrams per Liter
ug/L - microgram per Liter
mg/kg - milligram per kilogram
Deg F - Degrees in Fahrenheit
s.u. - standard unit
U - Not detected at the associated reporting limit.
J - Estimated concentration.

-- Data not available